

Longburn Primary School

Rich Learning

Term 3-4, 2009

The World of Mysteries: How can we solve problems?



Information is problematic because it comes from authors who may not have a neutral viewpoint

Changing technology is changing the nature in which we create and have access to information

Our world is full of mysteries that we don't yet have the answers for but it is human nature to search for these

Throughout our lives we will face problems that we need to solve



The World of Mystery: How can we solve problems?

Deeper Understanding

What the students will know and understand from the unit.

- Patterns and relationships help us make sense of the world around us.

Learning Disposition

What learning disposition will be developed as children work through the unit.

- Think critically

Context

Why this unit is relevant for our students

The context for this unit is problem-solving with a specific lens through the notions of mysteries. Problem-solving is an important aspect of learning development and it encourages learners to critically think about problems and the processes they can take to solve problems. Problem solving leads to reflective, creative and metacognitive thinking as well as high order, critical thinking skills and learners that are risk-takers. The use of mysteries provides a meaningful and engaging context for the children.

Deeper Knowledge – Curricula Links

What knowledge and skills are being developed?

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| <ul style="list-style-type: none">• Information is shaped for different purposes and a variety of audiences: different cultures, communities and organisations. (<i>Social Sciences/ Using L,S,T/ English</i>)• Information is communicated and presented in many different ways because of changing technology. (<i>Technology/ Using L,S,T</i>) | <ul style="list-style-type: none">• Finding relationships, interpreting and evaluating statistics and data (<i>Math and Statistics/ Thinking/ Using L,S, T</i>)• Making meaning of information from a variety of forms of language. (<i>English/ Using L, S,T</i>)• Create meaning from information using a variety of forms of language (<i>English/ Using L,S,T</i>)• Critical Thinking (<i>Thinking</i>)• Problem Solving (<i>Thinking</i>)• Social Inquiry (<i>Social Sciences/ Thinking</i>) |
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Culminating Rich Assessment

What the students are expected to produce.

Children will independently present an explanation or report detailing how to solve a problem or mystery and their learning journey through solving a problem they have identified.

Deeper Knowledge – Curricula Links

What knowledge and skills are being developed?

- | | |
|--|---|
| <ul style="list-style-type: none">• Information is shaped for different purposes and a variety of audiences: different cultures, communities and organisations. (<i>Social Sciences/ Using L,S,T/ English</i>)• Information is communicated and presented in many | <ul style="list-style-type: none">• Finding relationships, interpreting and evaluating statistics and data (<i>Math and Statistics/ Thinking/ Using L,S, T</i>)• Making meaning of information from a variety of forms of language. (<i>English/ Using L, S,T</i>) |
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different ways because of changing technology.
(*Technology/ Using L,S,T*)

- Create meaning from information using a variety of forms of language (*English/ Using L,S,T*)
- Critical Thinking (*Thinking*)
- Problem Solving (*Thinking*)
- Social Inquiry (*Social Sciences/ Thinking*)

Learning Intentions

What specific knowledge and skills do we want children to learn? (*From Deeper Knowledge*)

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|---|--|
| <ul style="list-style-type: none">• Describe what mysteries and problems are• Identify and compare different types of mysteries and problems• Identify components that help us solve problems: critical thinking, information/clues/ evidence gathering, analysing & evaluating,• Identify and compare ways in which problems can be solved• Identify things that can impair solving mysteries/ problems: lack of information/ evidence, red herrings, different people's perspectives. | <ul style="list-style-type: none">• Identify ways in which information can be gathered• Identify and describe how knowledge is shaped for different purposes by different people in different ways• Analyse and evaluate the worth and validity of information gathered• Use the inquiry process to gather information about a problem or mystery• Use higher order thinking skills to develop deep comprehension about a problem/mystery• Use and describe the learning journey process• Use problem-solving method to find answers to a mystery/problem• Identify strategies for solving problems |
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Resources

What resources are available to support learning?

<http://kids.mysterynet.com/>
http://pbskids.org/fetch/games/csi_1/game.html - interactive find the clues game!
<http://www.youthlinkcalgary.com/index.php?id=51>
<http://library.thinkquest.org/4471/> - problem solving
http://www.brainboxx.co.uk/a3_aspects/pages/problemsolvekids.htm
<http://www.world-mysteries.com/>
<http://www.unexplained-mysteries.com/>
<http://www.mysterymag.com/whatsnew/index.php>
<http://library.thinkquest.org/J002388/>
http://www.youtube.com/view_play_list?p=0068BDF43F45A601&search_query=mysteries+of+the+world
http://www.youtube.com/view_play_list?p=2A3445546F07F93D&search_query=mysteries+of+the+world
http://www.youtube.com/results?search_query=mysteries&search_type=&aq=f

[School Journal stories](#)

[Learning journey booklet](#)

Te Manawa visit & [activity info](#)

Teaching and Learning Scaffolding Sequence

Tuning In – Week 9,10 (Term 3) & Week 1, (Term 4)

Activating Prior Knowledge

Deep knowledge being focused on is...		Significant questions being focused on are...
<ul style="list-style-type: none"> Tuning in to all deeper understandings Problem Solving Critical Thinking Information – communicated & presented in different ways/ shaped for different audiences/ purposes 		<ul style="list-style-type: none"> What are some of the problems we face in our lives? How can we solve problems?
Productive Pedagogies	Learning Intentions	Learning Activities
Bloom's – remembering & understanding KWHL charts Venn diagrams Brainstorms	<ul style="list-style-type: none"> Describe what mysteries and problems are Identify and compare different types of mysteries and problems Identify components that help us solve problems: critical thinking, information/clues/ evidence gathering, analysing & evaluating, Identify and compare ways in which problems can be solved Identify things that can impair solving mysteries/ problems: lack of information/ evidence, red herrings, different people's perspectives. 	<ul style="list-style-type: none"> Brainstorm ideas about what problems & mysteries are. Read, experience, view and discuss a variety of different mysteries and problems focusing on gathering information, strategies used and thinking critically about the information & process: ✓ Mystery stories: Case of sneak thief shack; case of ruined roses; case of disappearing dimes; case of disappearing signs ✓ Harry Potter – looking for clues ✓ News stories: real-life crime ✓ Detective/ Crime/ CSI stories ✓ Natural mysteries – wonders of world articles & website ✓ Legends – yeti, abominable snowman, big foot, lochness monster, etc. ✓ Work with code-breakers, etc. Te Manawa visit – finding clues, evidence scientifically Police Station visit – detective & CSI work Consider what are mysteries – what are problems – make connections to real life – identify and compare different types and barriers. Begin learning journey reflection diary: Complete KWHL chart for problem solving/ mysteries

Whole Class Inquiry (Week 2 & 3, Term 4)

Remembering / Understanding / Applying / Analysing

Deep knowledge being focused on is...		Significant questions being focused on are...
<ul style="list-style-type: none"> Information is shaped for different purposes and a variety of audiences: different cultures, communities and organisations. Information is communicated and presented in many different ways because of changing technology. Making meaning of information from a variety of forms of language. Create meaning from information using a variety of forms of language Critical Thinking Social Inquiry 		<ul style="list-style-type: none"> How do we find the answers to mysteries or problems? How can information be a problem when trying to find answers? Why is some information a problem? Where and how can we get information?
Productive Pedagogies	Learning Intentions	Learning Activities
<ul style="list-style-type: none"> Learning journey process 	<ul style="list-style-type: none"> Identify ways in which information can be gathered 	<ul style="list-style-type: none"> Review what we need to know in order to find out about and solve mysteries/problems – focus on

<ul style="list-style-type: none"> • Inquiry learning • Understanding, applying, analysing, evaluating, creating • PMI charts • Graphic organisers – brainstorm, tables, main ideas 	<ul style="list-style-type: none"> • Identify and describe how knowledge is shaped for different purposes by different people in different ways • Analyse and evaluate the worth and validity of information gathered • Use the inquiry process to gather information about a problem or mystery • Use higher order thinking skills to develop deep comprehension about a problem/mystery • Use and describe the learning journey process 	<p>inquiry & problem-solving</p> <ul style="list-style-type: none"> • Review and use the learning journey process (<i>see flipchart – includes inquiry & problem-solving</i>) for 2-3 small scenarios to help children understand and identify the process used. • Set up scenario in class that involves false information, red herrings, different perspectives and identify how this affects information we gather. • Create a list/ guidelines of strategies and the process we can use for solving problems and gathering information – focus on critical thinking. • Create own mystery narratives involving clues, evidence, red herrings, problem solving strategies, etc. • Begin learning journey for a big class problem or mystery
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Whole Class Problem Solving (Week 4, Term 4)

Applying / Analysing / Evaluating / Creating

Deep knowledge being focused on is... <ul style="list-style-type: none"> • Finding relationships, interpreting and evaluating statistics and data (<i>Math and Statistics/ Thinking/ Using L,S, T</i>) • Problem Solving (<i>Thinking</i>) • Making meaning of information from a variety of forms of language. • Create meaning from information using a variety of forms of language • Critical Thinking 		Significant questions being focused on are... <ul style="list-style-type: none"> • How can we find the answer to mysteries or problems? • How do we know what is important to helping us solve the problem?
Productive Pedagogies	Learning Intentions	Learning Activities
<ul style="list-style-type: none"> • Learning journey process • Inquiry learning • Bloom's – all levels • Graphic organisers – brainstorm, tables, main ideas • Thinker's Key – reverse; what if; brainstorm 	<ul style="list-style-type: none"> • Analyse and evaluate the worth and validity of information gathered • Use higher order thinking skills to develop deep comprehension about a problem/mystery • Use and describe the learning journey process • Use problem-solving method to find answers to a mystery/problem • Identify strategies for solving problems 	<ul style="list-style-type: none"> • Complete learning journey: <ul style="list-style-type: none"> ✓ Decide which information is useful and how that could give answers/solutions – analysing & evaluating ✓ Generate ideas for answers/ solutions and test to see if solutions can be justified\ ✓ Evaluate and create answer/solution for best solution ✓ Evaluate and reflect on learning journey as class and strategies & process used.

Culminating Rich Assessment: Individual Inquiry & Problem Solving (*learning journey*) - (Week 5-7, Term 4)

Creating

Deep knowledge being focused on is... <ul style="list-style-type: none"> • Finding relationships, interpreting and evaluating statistics and data (<i>Math and Statistics/ Thinking/ Using L,S, T</i>) • Problem Solving (<i>Thinking</i>) • Making meaning of information from a variety of forms of language. • Create meaning from information using a variety of 	Significant questions being focused on are... <ul style="list-style-type: none"> • How can we find the answer to mysteries or problems? • How do we know what is important to helping us solve the problem?
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Productive Pedagogies	Learning Intentions	Learning Activities
<ul style="list-style-type: none"> • Learning journey process • Inquiry learning • Bloom's – all levels • Specifically - analysing and evaluating tools: compare & contrast; justifying ideas; drawing conclusions • graphic organisers • Thinker's Key – reverse; what if; brainstorm • De Bono Hats: combinations: white/red; black/yellow; green/blue for creating and designing. 	<ul style="list-style-type: none"> • Analyse and evaluate the worth and validity of information gathered • Use higher order thinking skills to develop deep comprehension about a problem/mystery • Use and describe the learning journey process • Use problem-solving method to find answers to a mystery/problem • Identify strategies for solving problems 	<ul style="list-style-type: none"> • Complete learning journey (INDEPENDENTLY): ✓ Decide which information is useful and how that could give answers/solutions – analysing & evaluating ✓ Generate ideas for answers/ solutions and test to see if solutions can be justified\ ✓ Evaluate and create answer/solution for best solution ✓ Evaluate and reflect on learning journey as class and strategies & process used. ✓ Present problem-solving learning journey on a PowerPoint to school audience.